

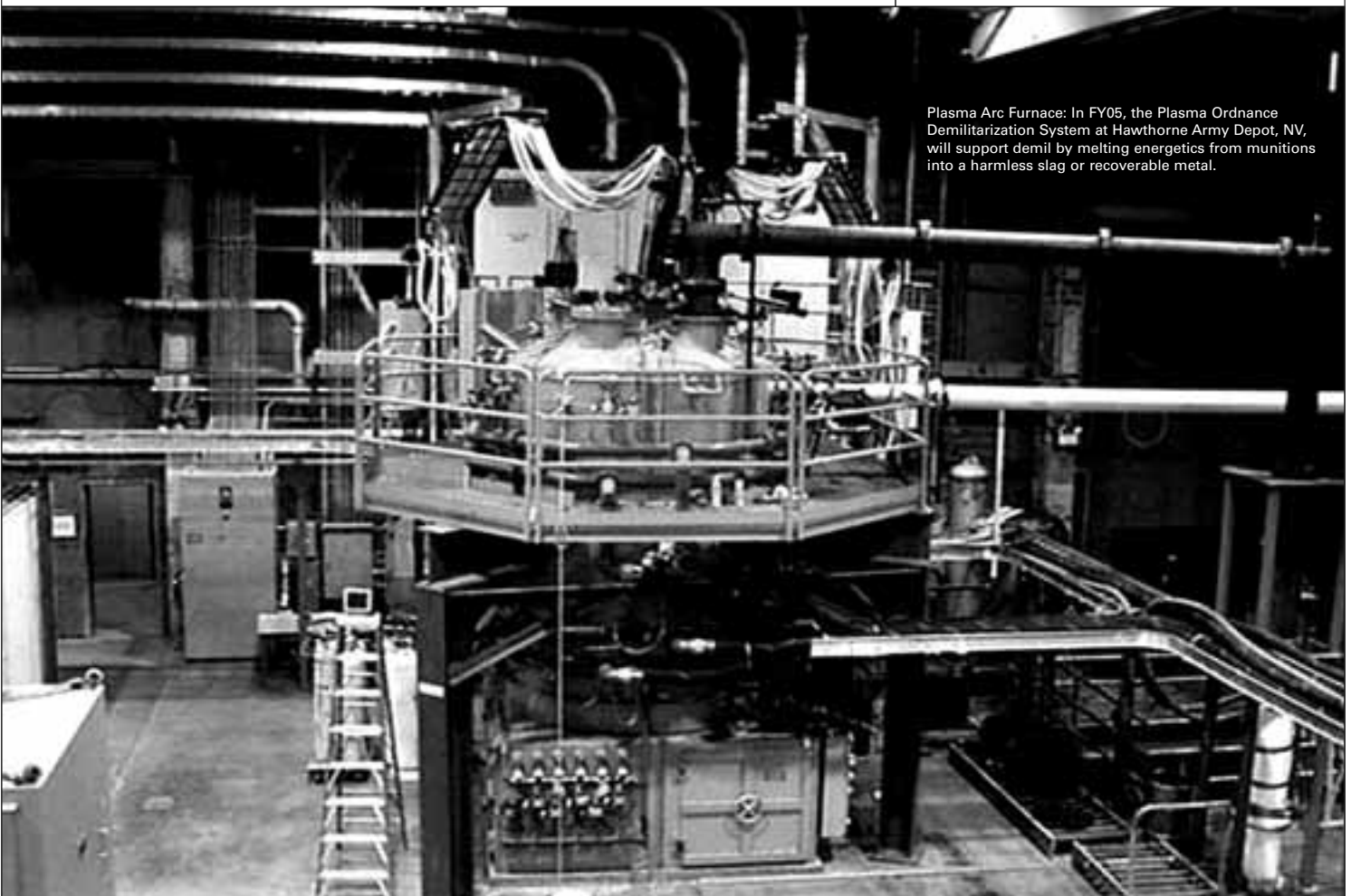
# Transforming Conventional Ammunition Demil

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*FUTURE COMBAT SYSTEMS*  
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**B**y the end of August 2003, the demilitarization (demil) stockpile stood at 367,619 tons, with a liability to the American taxpayer of more than \$1.4 billion. These figures may be on the low side because they do not include Army missiles or excess ammunition in Korea, Europe and Southwest Asia. Korea's stockpile alone stands at more than 97,000 tons. Today, the demil stockpile is about 20 percent of the total DOD CONUS depot stockpile (30-percent Army), but is forecasted to leap to about 52 percent by FY09. The dramatic change is due to the projected demil of Army missiles and other service items nearing the end of their shelf life.

Since the early 1990s, DOD has grappled with how to handle the demil stockpile, which has hovered around the 400,000-ton mark for more than a decade with no apparent relief in generations of excess, unsafe, obsolete or unserviceable ammunition. During FYs 95-00, DOD funded demil an average of nearly \$94.5 million annually, but the stockpile still experienced growth despite the Herculean effort to reduce tonnage. In 1996, the Army set a goal to reduce the demil stockpile to less than 100,000 tons by FY10. This goal is no longer achievable because of inadequate funding; higher



Plasma Arc Furnace: In FY05, the Plasma Ordnance Demilitarization System at Hawthorne Army Depot, NV, will support demil by melting energetics from munitions into a harmless slag or recoverable metal.

demil cost to meet mandates for environmental compliance; decreasing reliance on open burning (OB) and open detonation (OD) processes; increasing closed disposal technologies (CDT) and resource, recover and recycling (R3); and the need for more research and development (R&D) technologies to enhance existing capabilities. We are still generating more ammunition than we are destroying — a liability that hinders warfighter readiness and our environment. Although little headway has been gained with reducing the stockpile, the demil community, led by the Joint Munitions Command (JMC), can boast that it substantially reduced reliance on OB/OD from 88 percent of funds in FY92 to 78-percent (funds) reliance on CDT and R3 processes combined in FY02.

Demil challenges are considerable and illustrated in the adjacent pyramid. The complexity of the demil stockpile spans low-cost/low-risk operations at the top of the pyramid to high-cost/high-risk operations at the base. Demil will most likely experience cost growth as the “low-hanging fruit” yields to

more complex munitions and demil processes not yet known. Expanding environment, health and safety requirements add to the challenges but will be offset by the transition of R&D technologies and upfront ammunition design and life-cycle management that fully considers demilitarization. Private industry will continue to participate and invest in demil execution and R&D efforts as long as financial benefits provide sufficient incentives and mitigate expected risk.

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The Army's solution to these complicated challenges and problems was to establish a Product Manager for Demilitarization (PM Demil) Office and transition demil from a logistics function to an acquisition-centric program. On Dec. 6, 2002, the Army Acquisition Executive (AAE) affirmed the need for acquisition management of the DoD conventional ammunition demil program. The genesis of PM Demil was the transfer of the DoD Single

Manager for Conventional Ammunition (SMCA) Executor mission from the U.S. Army Materiel Command to the Program Executive Office for Ammunition (PEO Ammo) in April 2002. Subsequently, the AAE approved a PEO Ammo and JMC Implementation Plan to pave the way forward for transforming demil. The implementation plan provided the impetus for establishing an acquisition-managed program — PM Demil — and developing a strategic plan.



PM Demil strategic planning evolved from PEO Ammo guidance to establish a plan using the Six Sigma process concurrent with performing other transition activities. A Demil Strategic Plan Integrated Process Team (IPT) was chartered in late April 2003, which laid the foundation for a healthy and creative business enterprise focused on long-term success. Continuous coordination, cooperation and communication were of utmost importance to the process given the IPT's Joint character. In a time-constrained environment, the team had to focus on the end state. The IPT was involved in all plan aspects, including PM mission and vision, strategic goals and enabling objectives, performance measurements (metrics), process mapping, plan definition and content and other planning activity. After just 4 short months, PEO Ammo approved the plan Aug. 1, 2003. The demil mission, challenges and framework were clearly defined, laid out and accepted.

### Mission

Recently, PM Demil's responsibility expanded with the addition of Army Missile Demil effective FY04 through *Program Budget Decision 123*

(November 2002). In addition, the AAE concurred with the September 2003 draft SMCA policy changes to DoD Directive 5160.65 and DoD Instruction 5160.68 directing the Army to perform and fund the demil mission for *all* conventional ammunition including military service-retained items such as guided projectiles, submunitions and torpedoes. These decisions were significant in that they consolidated the demil program and made the Army the executive agent. The demil challenges are unique in the acquisition realm and are nothing like a “normal” weapons systems program.

Demil is accomplished OCONUS and primarily at 13 Army activities including our arsenals, depots, munition centers and ammunition plants. These sites have historically relied on OB/OD and incineration destructive processes for demil, but are now moving to more environmentally friendly CDT and R3 processes as demil R&D technology programs discover alternatives to OB/OD. To complement organic operations, the Army currently relies on two prime contractors — Parsons Brinkerhoff/NAMMO Demil LLC and General Dynamics-Ordnance and Tactical Systems Inc. These commercial partners will execute a 5-year indefinite delivery, indefinite quantity demil contract. The commercial contractors, with their subcontractors (including contracts with government activities), typically demil about 50 percent of the annual requirement.



**Autoclave Meltout:** An autoclave operator lowers projectiles into a pressure vessel where steam will melt out explosives that can be reclaimed.



**Supercritical Water Oxidation System (SCWO):** In FY06, the SCWO at McAlester Army Ammunition Plant, OK, will support demil by converting hazardous chemicals and materials into benign compounds using water at high temperatures and pressures.

## Vision

PM Demil's shared, accepted vision is an important investment in creating a better future for the community and its customers — warfighters, the American people and Army leadership. The vision is customer-focused on doing what's right for the Nation by shedding light on the demil mission and creating core values and competencies for today's and tomorrow's demil goals. The vision provides a simple, compelling and powerful direction for transformation, which will, ultimately, help make the demil community more effective and efficient.

Ultimately, the vision is designed to be a seamless, effective Joint Enterprise committed to efficient reduction of the U.S. Conventional Munitions Demilitarization Stockpile that improves warfighter readiness and enhances safe operations while safeguarding the natural environment for the American people.

Conventional ammunition demil is part of an era of change in munitions

life-cycle management and will evolve to face the demanding challenges of DOD 21st-century transformation. The demil community's structure, systems, practices and culture must assimilate the character of a rapidly changing environment to ensure that it can successfully achieve its mission, vision and goals. The demil community must act in unison to lead change and assure warfighters and the American people that it is proactively doing its part to improve operational readiness and effectiveness through more efficient business practices. PM Demil and the demil community must be leaders and practitioners of transformation focused on continuously improving the quality and processes of our business and service product — demilitarization.

## Goals

The demil community's top priority is to reduce the demil conventional ammunition stockpile. The old goal of reducing the stockpile to fewer

than 100,000 tons by FY10 no longer applies. Today's strategy is to reduce the stockpile by the generations plus a percentage of the beginning year demil stockpile. The annual percentage is expressed as a 6-percent standard goal (adequate performance) and an 8-percent stretch goal. The stretch goal is ambitious and will be achieved by innovation and breakthrough performance, helping to more rapidly attain the goals for a manageable stockpile. Given these methodology and affordability constraints, the stockpile is projected to be about 100,000 tons by FY19 for an 8-percent goal and by FY23 for a 6-percent goal. Achieving this goal depends on the success of other strategic factors, such as Design for Demil (DFD), source-of-supply and adequate program funding.

Ammunition developers play a key role in demil's affordability by ensuring it is an integral part of the life-cycle management processes for all new and modified ammunition products. Designing for demil, like other engineering disciplines, must be balanced with performance and other "design to" requirements. With DOD guidance to avoid using OB/OD as a primary demil/disposal method and to *limit liability* because of environmental, safety and occupational health laws, DFD cannot be ignored. An IPT was formed to develop DFD tools and processes, which will substantially help reduce liability. Developing these tools will also enhance warfighter readiness via reduced life-cycle demil costs and benefits realized through improved R3,

reuse and source-of-supply processes and initiatives.

Although generally viewed as a liability, the demil stockpile is an asset with respect to supporting DOD sustainment goals and operations by providing a valuable supply source for critical munitions components. The resource, recovery and reuse of certified components and energetics, such as HMX and TNT or high-value electronics or materials,

have several benefits. The only way to domestically acquire TNT is through reclamation. Reuse can improve affordability, reduce dependence on foreign or alternative supply sources, avoid costs of increasingly scarce strategic materials and help to reduce the impact on the environment. Private industry partners are important to developing and marketing these sources.

Finally, the demil community must become the Nation's environmental

stewards to safeguard the natural environment and protect human health. As we strive to implement the strategic plan, the demil community must successfully deal with the complex environmental issues. As environmental stewards, the demil community must recover, recycle and reuse munition components, energetics and designated wastes to the greatest extent possible; and minimize or eliminate pollution during demil execution operations and R&D technology

projects. The demil workforce will use R&D technology to identify problems, risks and solutions that enhance the natural environment and

protect our workforce and the general public. The environment will also be a driver in influencing munitions design and modification, and a factor in the selection and funding of demil R&D technology efforts.

Demil success will depend on people embracing transformation and proactively committing to

doing what's right, and listening to our customers. We must also learn to foster a new business culture that makes us more effective and efficient with our competing resources and constrained funds. The demil community has accomplished much, and the strategic plan creates the glidepath forward for demilitarization and attainment of our core goals and objectives.

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PM Demil and the demil community must be leaders and practitioners of transformation focused on continuously improving the quality and processes of our business and service product — demilitarization.

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#### Correction

In the November-December 2003 *Army AL&T* article, "Army Venture Capital Initiative," Mr. Bruce Held was incorrectly listed as an author. We regret this error.